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AIM2 Recombinant Rabbit mAb

Catalog # AP97149

Product Information

Application	WB, IHC-P, IHC-F, IF, E
Primary Accession	O14862
Other Accession	O14862
Reactivity	Rat, Human, Mouse
Host	Rabbit
Clonality	Recombinant
Calculated MW	38954
Isotype	IgG
Purity	affinity purified by Protein A
Buffer	0.01M TBS (pH7.4) with 1% BSA, 0.02% Proclin300 and 50% Glycerol.
SIMILARITY	Belongs to the HIN-200 family.Contains 1 DAPIN domain.Contains 1 HIN-200 domain.
SUBUNIT	Self-associates; forms homooligomers in response to cytosolic dsDNA and the dsDNA seems to serve as oligomerization platform. Component of the AIM2 inflammasome complex. Interacts with PYCARD. Interacts with IFI16 (By similarity). Interacts with EIF2AK2/PKR (By similarity).
Background Descriptions	AIM2 is a member of the IFI20X /IFI16 family. It plays a putative role in tumorigenic reversion and may control cell proliferation. Interferon-gamma induces expression of AIM2. [provided by RefSeq, Jul 2008],

Additional Information

Gene ID	9447
Other Names	PYHIN4; Gm1313; Ifi210; AIM2_HUMAN; AIM2; Absent in melanoma 2; AIM2_MOUSE; Interferon-inducible protein 210 (Ifi-210); Interferon-inducible protein p210; Interferon-inducible protein AIM2
Dilution	IHC-P=1:50-200,IHC-F=1:50-200,WB=1:500-2000,IF=1:50-200,ELISA=1:5000-10000
Storage	Store at -20 °C for one year. Avoid repeated freeze/thaw cycles. When reconstituted in sterile pH 7.4 0.01M PBS or diluent of antibody the antibody is stable for at least two weeks at 2-4 °C.

Protein Information

Name	AIM2 {ECO:0000303|PubMed:9242382, ECO:0000312|HGNC:HGNC:357}
Function	Sensor component of the AIM2 inflammasome, which mediates inflammasome activation in response to the presence of double-stranded

DNA (dsDNA) in the cytosol, leading to subsequent pyroptosis (PubMed:17726700, PubMed:19158675, PubMed:19158676, PubMed:19158679, PubMed:20566831, PubMed:23530044, PubMed:26197926, PubMed:26583071, PubMed:29440442, PubMed:33980849, PubMed:37364111). Inflammasomes are supramolecular complexes that assemble in the cytosol in response to pathogens and other damage-associated signals and play critical roles in innate immunity and inflammation (PubMed:17726700, PubMed:19158675, PubMed:19158676, PubMed:19158679, PubMed:20566831, PubMed:26197926, PubMed:29440442, PubMed:33980849). Acts as a recognition receptor (PRR): specifically recognizes and binds dsDNA in the cytosol, and mediates the formation of the inflammasome polymeric complex composed of AIM2, CASP1 and PYCARD/ASC (PubMed:17726700, PubMed:19158675, PubMed:19158676, PubMed:19158679, PubMed:20566831, PubMed:26197926, PubMed:29440442, PubMed:33980849). Recruitment of pro-caspase-1 (proCASP1) to the AIM2 inflammasome promotes caspase-1 (CASP1) activation, which subsequently cleaves and activates inflammatory cytokines IL1B and IL18 and gasdermin-D (GSDMD), promoting cytokine secretion (PubMed:17726700, PubMed:19158675, PubMed:19158676, PubMed:19158679, PubMed:20566831). In some cells, CASP1 activation mediates cleavage and activation of GSDMD, triggering pyroptosis without promoting cytokine secretion (PubMed:19158675, PubMed:19158676). Detects cytosolic dsDNA of viral and bacterial origin in a non-sequence-specific manner (PubMed:17726700, PubMed:19158675, PubMed:19158676, PubMed:19158679, PubMed:20566831, PubMed:26197926, PubMed:26583071, PubMed:29440442, PubMed:33980849). Involved in the DNA damage response caused by acute ionizing radiation by mediating pyroptosis of intestinal epithelial cells and bone marrow cells in response to double-strand DNA breaks (By similarity). Mechanistically, AIM2 senses DNA damage in the nucleus to mediate inflammasome assembly and inflammatory cell death (By similarity). Also acts as a regulator of neurodevelopment via its role in the DNA damage response: acts by promoting neural cell death in response to DNA damage in the developing brain, thereby purging genetically compromised cells of the central nervous system (By similarity). Pyroptosis mediated by the AIM2 inflammasome in response to DNA damage is dependent on GSDMD without involving IL1B and IL18 cytokine secretion (By similarity). Also acts as a mediator of pyroptosis, necroptosis and apoptosis (PANoptosis), an integral part of host defense against pathogens, in response to bacterial infection (By similarity). Can also trigger PYCARD/ASC- dependent, caspase-1-independent cell death that involves caspase-8 (CASP8) (By similarity).

Cellular Location

Cytoplasm. Inflammasome. Nucleus. Note=Activated inflammasomes can aggregate in the cytosol as speck-like particles (PubMed:19158675, PubMed:19158676, PubMed:19158679). Activated inflammasomes can also aggregate in the nucleus in response to DNA damage: AIM2 is recruited to double-strand DNA breaks and mediates activation of the AIM2 inflammasome (By similarity). {ECO:0000250|UniProtKB:Q91VJ1, ECO:0000269|PubMed:19158675, ECO:0000269|PubMed:19158676, ECO:0000269|PubMed:19158679}

Tissue Location

Expressed in spleen, small intestine, peripheral blood leukocytes, and testis.

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